Whale Rock Commission Report

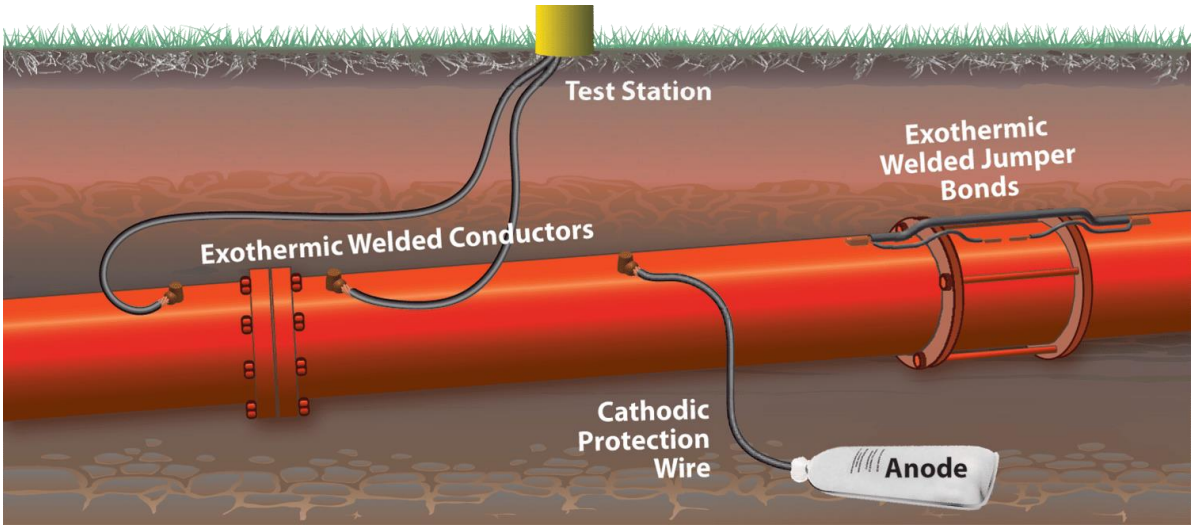
Whale Rock Commission Meeting – May 8, 2025
Agenda Item 4 – Cathodic Protection Study, Whale Rock Pipeline

FROM: Aaron Floyd, Utilities Director
PREPARED BY: Noah Evans, Whale Rock Supervisor

SUBJECT: Cathodic Protection Survey of the Whale Rock Pipeline

RECOMMENDATIONS
No action is requested of the Commission for this update/presentation.

DISCUSSION
Cathodic protection prevents corrosion in metal structures, such as pipelines and tanks, by applying a low electrical current. This method has been utilized since the 1930s. We use sacrificial cathodic protection for the Whale Rock pipeline, where magnesium sulfide acts as the anode, corroding in place of the pipeline to protect it.



SACRIFICIAL ANODE CATHODIC PROTECTION SYSTEM

In January, our team collaborated with a specialized consultant to conduct a comprehensive survey of Whale Rock's cathodic protection system (CPS). The survey's objective was to assess the effectiveness of the CPS by measuring pipeline-to-soil electrical flows against established industry standards at various points along the pipeline. Key factors influencing the performance of the CPS, including electrical isolation, interference, and continuity, were evaluated.

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The consultant's report provides the following recommendations aimed at enhancing the functionality of the CPS:

Recommendations:

1. Replacement of Anodes: Seventeen anodes require replacement. Anodes are sacrificial components that protect the pipeline from corrosion by corroding themselves. Anodes are wired to the pipeline and buried nearby. The replacement process will involve excavation, installation of new anodes, and backfilling of the excavated areas.

2. **Installation of Electrical Isolators:** To improve performance and eliminate any risk of interference with the City of San Luis Obispo Water Treatment Plant's metal pipes, electrical isolators will be installed between the Whale Rock pipeline and the Water Treatment Plant.

3. **Re-establishment of Anode and Test Station Connections:** Connections between the anodes and test stations will be re-established at eleven specific locations. This will enable assessing anode performance at these sites, some of which may require new anode installations.

4. **Installation of Additional CPS Test Stations:** Six additional CPS test stations will be installed along the pipeline. Currently, there are no CPS test stations between Pump Station B and the SLO Water Treatment Plant, which spans approximately four miles.

Staff plans to re-establish the anode-to-test station connections (Report Recommendation #3) over the coming months and to install the six additional CPS test stations (Report Recommendation #4) during the summer. Additionally, staff will develop a project for the Commission's future consideration to address Recommendations 1 and 2.

ATTACHMENTS:

A - Cathodic Protection Survey Whale Rock Pipeline